

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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In re application of: Martin BAKER et al. Group Art Unit: 1725

10 Serial No.: 10/789,854 Examiner: M. Aboagye

Filed: February 26, 2004

For: HAND HELD POWDER-FED LASER FUSION WELDING TORCH

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Attorney Docket No.: H0002114D2

Customer No.: 000128

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APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

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Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
30 Alexandria, VA 22313-1450

Sir:

Appellant hereby submits its Appeal Brief in response to the final rejection of the
35 subject patent application.

The Commissioner is hereby authorized to charge Ingrassia, Fisher & Lorenz,
Deposit Account No. 50-2091, \$500 for the filing of this Appeal Brief.

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I. INTRODUCTION

This is an Appeal Brief under 37 C.F.R. § 41.37 appealing the rejections set forth in the final Office action dated April 24, 2007. Each of the topics required by 37 C.F.R. § 41.37 is presented in this Brief and is labeled appropriately.

II. REAL PARTY IN INTEREST

Honeywell International Inc. (“Honeywell”) is the real party in interest of the present application.

III. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences related to the present application of which Appellant is aware.

IV. STATUS OF CLAIMS

Claims 16-19, which are presented in the Claims Appendix, are pending in the application. As filed Claims 1-15 and 20-25 have been canceled. Each of Claims 16-19 stand finally rejected. Accordingly, the Appellant hereby appeals the final rejection of

5 Claims 16-19.

V. STATUS OF AMENDMENTS

No amendments have been filed following the final Office action of April 24, 2007.

VI. SUMMARY OF CLAIMED SUBJECT MATTER

The subject matter of independent Claim 16, which is the sole independent claim on appeal, relates to a hand-held laser fusion welding torch system (100) that includes a body (104), a handle (102), a nozzle (140), and a plurality of filler material supply channels (152). The body (104) has a first end and a second end (FIGS. 1, 2, 3, 4, 7). The body first end is adapted to couple to a laser beam delivery system (130) (pg. 13, l. 13; FIG. 2). The handle (102) is coupled to the body (104) and is dimensioned to be grasped by a hand (pg. 8, ll. 13-17; FIG. 2). The nozzle (140) has a first end, a second end, and an outer surface (FIGS. 1-3). The nozzle first end is coupled to the body second end, and the nozzle second end includes an aperture (144) through which a laser beam (250) from the laser beam delivery system may pass through to a laser beam focal point (270) (pg. 13, l. 14 through pg. 14, l. 8; FIG. 2). Each filler supply channel (152) includes an inlet port (150) formed in the nozzle outer surface and an outlet port (148) formed in the nozzle second end. Each inlet port is configured to receive filler material, and each outlet port is configured to discharge filler material toward a filler material focal point (pg. 10, l. 22 through pg. 11, l. 5; FIGS. 1, 2, 3). The laser beam focal point and the filler material focal point are independently adjustable (pg. 15, ll. 2-3).

VII. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed in this appeal are as follows:

1. Whether Claims 16-19 are unpatentable under 35 U.S.C. § 103 over U.S.
5 Patent Nos. 5,321,228 (Krause et al.) and 4,237,364 (Lemelson).

VIII. ARGUMENTS

I. CLAIMS 1-16 ARE NOT UNPATENTABLE UNDER 35 U.S.C. §103 OVER KRAUSE ET AL. AND LEMELSON

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The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. In re Fine, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Indeed, the Examiner has the burden of setting forth a detailed evidentiary basis for the teaching, suggestion or motivation to combine the cited references. Indeed, as the Supreme Court recently
10 reiterated, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” KSR International Co. v. Teleflex Inc., 127 S. Ct. 1727, 1741 (2007). A claim cannot be found *prima facie* obvious unless all of the claim elements are either taught or suggested in the cited art or form part of the knowledge of one of ordinary skill
15 in the art, or all of claim elements are obvious from the nature of the problem itself. In re Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999) (emphasis added); In re Wilson, 424 F.2d 1382, 1385 (C.C.P.A. 1970) (“All words in a claim must be considered in judging the patentability of that claim against the prior art.”).

Moreover, it is well-settled that, in order to avoid succumbing to the temptation of
20 reliance on hindsight, the teaching or suggestion to make the claimed combination must not be found in an applicant’s disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Although it is recognized that any determination of obviousness is, in a sense, based on hindsight reasoning, if the determination does not take into account only

knowledge within the level of ordinary skill in the art at the time the claimed invention was made, but relies on knowledge gleaned only from an applicant's own disclosure, then hindsight has been impermissibly applied. In re McLaughlin, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971).

5 Appellant submits that the Examiner has not met his burden in establishing a *prima facie* case of obviousness because the prior art does not objectively teach or suggest all of the recited claim elements, nor are all of the recited claim elements obvious from the nature of the problem itself. It is submitted that the Examiner is unwittingly relying on impermissible hindsight reasoning, as will now be explained.

10 Independent Claim 16 relates to a hand-held laser fusion welding torch system that includes a body, a handle, a nozzle, and a plurality of filler material supply channels. The body is adapted to couple to a laser beam delivery system, and the handle is coupled to the body. The nozzle has a first end, a second end, and an outer surface. The nozzle first end is coupled to the body second end, and the nozzle second end includes an
15 aperture through which a laser beam from the laser beam delivery system may pass through to laser beam focal point. Each filler supply channel includes an inlet port formed in the nozzle outer surface and an outlet port formed in the nozzle second end. Each inlet port is configured to receive filler material, and each outlet port is configured to discharge filler material toward a filler material focal point. Independent Claim 16
20 recites, *inter alia*, that the laser beam focal point and the filler material focal point are independently adjustable.

Krause et al. relates to a laser welding nozzle, and discloses a laser beam aperture (18) and a plurality of filler media supply passages (e.g., "powder guide ducts) (6). The

laser beam aperture is formed in a laser beam guide part (10), and the filler media supply passages are defined between the outer peripheral surface of a powder guide cap (4) and the inner contours of an inert gas guide cap (8) (col. 4, ll. 7-20; FIG. 1).

In the final Office action, the Examiner alleges that because Krause et al. discloses that the powder guide cap and laser beam guide part are separate parts this “suggests separate and independent controls for the laser stream and filler feed stream.” See final Office action at 4. This allegation epitomizes the entire doctrine of hindsight reasoning in that it is contrary to what Krause et al. explicitly teaches. The allegation epitomizes hindsight because there clearly is no suggestion whatsoever in Krause et al. that the laser beam focal point and the filler material focal point are independently adjustable. Indeed, Appellant submits that Krause et al. explicitly teaches away from independent adjustment capabilities. In particular, Krause et al., at col. 4, ll. 21-24, teaches that “a positive and non-positive connection between both caps 4, 8 with the tight enclosure of the powder guide ducts 6 right to their outlet apertures 7 is achieved with the tightening of a coupling ring 15 by means of thread 16 on its stepped shoulder.” Thus, Krause et al. teaches that the caps 4, 8 are fixedly tightened prior to use, and are not adjustable. Krause et al. does disclose, at col. 2, ll. 29-31, that the construction of the disclosed nozzle allows for the supply of a powder-gas mixture in the shape of an inverted cone, whereby the apex of the inverted cone will coincide with the defocused laser beam outside the nozzle. However, this does not even remotely suggest independent adjustability of the laser beam focal point and the filler material focal point. The only suggestion to do so comes from Appellant’s own disclosure.

As to Lemelson, this patent was cited for its disclosure of a hand held laser welding device; however, it also fails to disclose or suggest at least the same feature that is deficient in Krause et al.

In view of the foregoing, Appellant submits that the combination of Krause et al. and Lemelson fails to establish a *prima facie* case of obviousness of independent Claim 5 16. Moreover, because independent Claim 16 is not obvious, then dependent Claims 17-19 are also not obvious. In re Fine, *supra*.

IX. CONCLUSION

In view of the foregoing, Appellant submits that the rejection of Claims 16-19 is improper and should not be sustained. Therefore, a reversal of the rejections in the Office action dated April 24, 2007, is respectfully requested.

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Respectfully submitted,

10 Dated September 14, 2007

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X. CLAIMS APPENDIX

Claims on Appeal

16. A hand-held laser fusion welding torch system, comprising:
- 5 a body having a first end and a second end, the body first end adapted to couple to laser beam delivery system;
- a handle coupled to the body and dimensioned to be grasped by a hand;
- a nozzle having a first end, a second end, and an outer surface, the nozzle first end coupled to the body second end, the nozzle second end including an aperture through which a laser beam from the laser beam delivery system may pass through to laser beam
- 10 focal point; and
- a plurality of filler material supply channels, each filler supply channel including an inlet port formed in the nozzle outer surface and an outlet port formed in the nozzle second end, each inlet port configured to receive filler material, each outlet port configured to discharge filler material toward a filler material focal point,
- 15 wherein the laser beam focal point and the filler material focal point are independently adjustable.
17. The torch system of Claim 17, further comprising:
- a removable gas cover adapted to detachably couple to the nozzle, the gas cover
- 20 having an aperture through which the laser beam from the laser beam delivery system may pass when the gas cover is coupled to the nozzle

18. The torch system of Claim 18, further comprising:
a gas flow delivery system coupled to the removable gas cover.

19. The torch system of Claim 17, further comprising:
5 a powder supply system coupled to the filler media supply channels and operable
to supply filler media to the filler media supply channels.

XI. EVIDENCE APPENDIX

No evidence pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 has been entered by the Examiner or relied upon by Appellant in the instant appeal beyond that which is already contained in the as-filed application, as is delineated in the Arguments section of this Brief.

XII. RELATED PROCEEDINGS APPENDIX

As there are no related appeals and interferences, there are also no decisions rendered by a court or the Board of Patent Appeals and Interferences that are related to the instant appeal.